

# Neural Network Time Series Forecasting of Finite-Element Mesh Adaptation

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## Abstract

In this paper, basic learning algorithms and the neural network model are applied to the problem of mesh adaptation for the Finite Element Method for solving time dependent partial differential equations. Time series prediction via the neural network methodology is used to predict the areas of “interest” in order to obtain an effective mesh refinement at the appropriate times. This allows for increased numerical accuracy with the same computational resources as compared with more “traditional” methods.